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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,452	04/16/2001	Karl Reimer	23541-7002	5862
22854	7590	01/18/2006	EXAMINER	
MOORE, HANSEN & SUMNER, PLLP 225 SOUTH SIXTH ST MINNEAPOLIS, MN 55402			WONG, EDNA	
		ART UNIT	PAPER NUMBER	
		1753		

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/836,452	REIMER, KARL	
	Examiner Edna Wong	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 05 December 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 92-97,101-115 and 119-135 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 92-97,101-115 and 119-135 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                       |                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                  | Paper No(s)/Mail Date. _____ .                                              |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>December 5, 2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                                       | 6) <input type="checkbox"/> Other: _____ .                                  |

This is in response to the Amendment dated December 5, 2005. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Arguments***

#### **Claim Objections**

Claim 121 has been objected to because of minor informalities.

The objection of claim 121 has been withdrawn in view of Applicant's amendment.

#### **Claim Rejections - 35 USC § 112**

Claim 127 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claim 127 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicant's amendment.

#### **Claim Rejections - 35 USC § 103**

I. Claims 92-97, 101-107 and 113-114 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. (US Patent No. 6,565,927 B1).

The rejection of claims 92-97, 101-107 and 113-114 under 35 U.S.C. 103(a) as

being unpatentable over Drzal et al. is as applied in the Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicant states that Drzal et al. teach against using a one-step process in which the surface is exposed solely to radiation when Drzal et al. state, "the present process creates surfaces which wet better than if they were exposed solely to UV radiation (180 nm-500 nm), creates similar substrate surfaces in a shorter time than achieved using only UV or Ozone and is cheaper than using only UV or Ozone."

In response, the claims as presently written are open to having water on the surface of the substrate. The word "comprising" is inclusive and fails to exclude unrecited steps. *In re Horvitz* 168 F 2d 522, 78 USPQ 79 (CCPA 1948).

Applicant states that the UV light (see Column 7, lines 19-25) from the lamp 24, or alternatively, from a pulsed xenon lamp (see Column 8, line 45) is disclosed only as pulsed UV light.

Because Drzal et al. do not disclose the use of continuous UV radiation, as recited in the present claims, it is respectfully submitted that Drzal et al. does not teach the present invention.

In response, Drzal teaches a continuous radiation. Drzal teaches that the light can be pulsed or **continuous** (abstract). Drzal teaches that a pulsed lamp **is preferred** to prevent overheating of the substrate (col. 9, lines 10-11). Although Drzal did not

prefer the continuous radiation that does not mean that it would not have been obvious to do so. The disclosure of reference must be considered for what it fairly teaches one of ordinary skill in the art, pertinence of non-preferred disclosure must be reviewed in such light (MPEP § 2123).

Applicant states that the use of a pulsed or "flash" type radiation is not a continuous radiation of the type disclosed and claimed in the present application.

In response, Applicant claims a continuous ultraviolet radiation in claim 92, line 7.

In claim 103, line 3, the substrate is exposed to the active zone for a residence time.

In claim 104, line 2, the residence time is **about 0.1 seconds** to about 10 seconds.

In claim 105, line 2, the residence time is **about 0.2 seconds** to about 5 seconds.

Either the substrate is conveyed really fast through the active zone or the continuous radiation is pulsed to provide such a short period of exposure time. No difference is seen doing one or the other. Thus, Drzal would have taught a continuous radiation of the type disclosed and claimed in the present application.

Applicant states that not only do Drzal et al. not teach the use of continuous radiation, as noted by the Examiner, but they in fact teach away from such a risk filled

use of UV light on the sensitive surfaces they treat.

In response, Drzal teaches a continuous radiation. Drzal teaches that the light can be pulsed or **continuous** (abstract). Drzal teaches that a pulsed lamp *is preferred* to prevent overheating of the substrate (col. 9, lines 10-11). Although Drzal did not prefer the continuous radiation that does not mean that it would not have been obvious to do so. The disclosure of reference must be considered for what it fairly teaches one of ordinary skill in the art, pertinence of non-preferred disclosure must be reviewed in such light (MPEP § 2123).

The disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (MPEP § 2123).

II. Claims 108-112 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Drzal et al.** (US Patent No. 6,565,927 B1) as applied to claims 92-97, 101-107 and 113-114 above, and further in view of **Cates et al.** (US Patent No. 5,512,123) and **Elliott et al.** (US Patent No. 5,669,979).

The rejection of claims 108-112 under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. as applied to claims 92-97, 101-107 and 113-114 above, and further in view of Cates et al. and Elliott et al. is as applied in the Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicant states that Cates teaches pulsed UV radiation and it respectfully submitted that Elliott et al. do as well. Therefore, without the teaching of the continuous

use of the UV radiation, it is respectfully submitted that the case of obviousness cannot be maintained.

In response, the rejection is not overcome by pointing out that one reference does not contain a particular limitation when reliance for that teaching is on another reference. *In re Lyons* 150 USPQ 741 (CCPA 1966). Moreover, it is well settled that one cannot show nonobviousness by attacking the references individually where, as here, the rejection is based on a combination of references. *In re Keller* 208 USPQ 871 (CCPA 1981); *In re Young* 159 USPQ 725 (CCPA 1968).

Drzal teaches a continuous radiation. Drzal teaches that the light can be pulsed or **continuous** (abstract). Drzal teaches that a pulsed lamp **is preferred** to prevent overheating of the substrate (col. 9, lines 10-11). Although Drzal did not prefer the continuous radiation that does not mean that it would not have been obvious to do so. The disclosure of reference must be considered for what it fairly teaches one of ordinary skill in the art, pertinence of non-preferred disclosure must be reviewed in such light (MPEP § 2123).

III. Claims 115, 119 and 120 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Drzal et al.** (US Patent No. 6,565,927 B1).

The rejection of claims 115, 119 and 120 under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. is as applied in the Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicant states that that it is not at all likely that one skilled in the art would be able to find such an appropriate range after removing the first step employed by Drzal et al., the step of adding water to the surface of the substrate prior to or during the exposure of the surface to the pulsed UV radiation.

In response, Drzal teaches both the absence and presence of water ("water droplets or a sheet of water are *preferably* placed on the substrate surface" (col. 6, lines 41-42) and "the water *if present* on the surface" (col. 6, line 48)).

Drzal teaches that it was observed that polycarbonate is significantly modified by UV radiation. From Table 1, it is also observed that the same synergistic effect of water is seen for polycarbonate as was noted for reactor grade TPO (col. 11, lines 30-33).

Although Drzal did not prefer the absence of water that does not mean that it would not have been obvious to do so. Thus, with regards to the UV treatment in the absence of water, one having ordinary skill of the art has the skill to optimize the intensity of the electromagnetic radiation with respect to a continuous UV light exposure

during routine experimentation (MPEP § 2144.05(II)).

IV. Claims 121-123 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Drzal et al.** (US Patent No. 6,565,927 B1).

The rejection of claims 121-123 under 35 U.S.C. 103(a) as being unpatentable over 35 U.S.C. 103(a) as being unpatentable over Drzal et al. is as applied in the

Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

V. Claims **124-127** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Drzal et al.** (US Patent No. 6,565,927 B1) as applied to claims 121-123 above, and further in view of **Cates et al.** (US Patent No. 5,512,123) and **Elliott et al.** (US Patent No. 5,669,979).

The rejection of claims 124-127 under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. as applied to claims 121-123 above, and further in view of Cates et al. and Elliott et al. is as applied in the Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

VI. Claims **128-132 and 134-135** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Drzal et al.** (US Patent No. 6,565,927 B1).

The rejection of claims 128-132 and 134-135 under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. is as applied in the Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the reasons as discussed

above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

**VII.** Claim 133 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. (US Patent No. 6,565,927 B1) as applied to claims 128-132 and 134-135 above, and further in view of Cates et al. (US Patent No. 5,512,123) and Elliott et al. (US Patent No. 5,669,979).

The rejection of claim 133 under 35 U.S.C. 103(a) as being unpatentable over Drzal et al. as applied to claims 121-123 above, and further in view of Cates et al. and Elliott et al. is as applied in the Office Action dated June 3, 2005 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

***Response to Amendment***

***Claim Objections***

Claim 128 is objected to because of the following informalities:

**Claim 128**

line 12, the word "wetability" should be amended to the word -- wettability --.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Claims 115, 119-120 and 127 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 115**

line 12-13, "the polymer substrate" lacks antecedent basis.

**Claim 127**

line 2, "the polymer substrate" lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 92-94 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 36 31 123 A1 ('123).

DE '123 teaches a method of preparing a substrate (= soles of a shoes) for adherence of a material (= a polyurethane adhesive), the method comprising the steps

of:

(a) generating an active zone using an electromagnetic radiation source (Fig. 1);

and

(b) exposing the surface of said substrate to the active zone, whereby the surface of the substrate (= soles of shoes) is chemically modified (*inherent*) for adhering the material (= a polyurethane adhesive) onto said substrate by exposure to the active zone (= the soles and uppers of shoes are bonded together with polyurethane adhesive after treating the surface of the sole to improve the bond), wherein the substrate is exposed to electromagnetic radiation in the active zone including continuous ultraviolet radiation having a wavelength in the range of about 150 nanometers to 400 nanometers (= 200-400 nm) and wherein the step of exposing occurs at substantially ambient pressure (*inherent*) [abstract].

The substrate includes a polymer (= thermoplastic rubber materials) [abstract].

The substrate is a sole of a shoe [abstract].

Since DE '123 teaches all of the limitations recited in the instant claims, the reference is deemed anticipatory.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. **Claims 101-107 and 111-112 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 36 31 123 A1 ('123) as applied to claims 92-94 above. DE '123 is as applied above and incorporated herein.**

The method of DE '123 differs from the instant invention because DE '123 does not disclose the following:

a. Wherein the intensity of said electromagnetic radiation at the surface of the substrate ranges from about 2.0 joules per square centimeter to about 5,000 joules per square centimeter, as recited in claim 101.

b. Wherein the intensity of said electromagnetic radiation at the surface of the substrate ranges from about 10 joules per square centimeter to about 1000 joules per square centimeter, as recited in claim 102.

The electromagnetic radiation disclosed by DE '123 inherently has an intensity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the intensity described by DE '123 with wherein the intensity of said electromagnetic radiation at the surface of the substrate ranges from about 2.0 joules per square centimeter to about 5,000 joules per square centimeter; and wherein the intensity of said electromagnetic radiation at the surface of the substrate ranges from about 10 joules per square centimeter to about 1000 joules per square centimeter because the intensity of the electromagnetic radiation is a result-

effective variable and one skilled in the art has the skill to calculate the intensity that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, it appears that one having ordinary skill in the art would have had the skill to adjust the intensity of the electromagnetic radiation source to radiate a metal substrate vs. an organic substrate. It does not appear that the same intensity would have been applied to both types of materials.

c. Wherein the step of exposing includes conveying the substrate through said active zone using a conveyor system whereby the substrate is exposed to the active zone for a residence time, as recited in claim 103.

DE '123 teaches a residence time (= 15-30 minutes) [abstract].

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have exposing step the method described by DE '123 with wherein the step of exposing includes conveying the substrate through said active zone using a conveyor system whereby the substrate is exposed to the active zone for a residence time because a continuous operation would have been obvious in light of the batch process of the prior art (MPEP § 2144.04(e)).

d. Wherein the residence time is in a range of from about 0.1 seconds to about 10 seconds, as recited in claim 104.

e. Wherein the residence time is in a range of from about 0.2 seconds to about 5 seconds, as recited in claim 105.

DE '123 teaches a residence time of 15-30 minutes (abstract).

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the residence time described by DE '123 with wherein the residence time is in a range of from about 0.1 seconds to about 10 seconds; and wherein the residence time is in a range of from about 0.2 seconds to about 5 seconds because the residence time is a result-effective variable and one skilled in the art has the skill to calculate the residence time that would determine the success of the desired reaction to occur, absent evidence to the contrary (MPEP § 2141.03 and § 2144.05(b)).

f. Wherein the conveyor system further includes a conveyor belt for carrying the substrate, as recited in claim 106.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by DE '123 with wherein the conveyor system further includes a conveyor belt for carrying the substrate because conveyor belts are conventional in carrying articles through a continuous treatment process. It has been held that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination (MPEP § 2144.06 and § 2144.07).

g. Evacuating the active zone in a location adjacent to the conveyor system, as recited in claim 107.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by DE '123 by evacuating the active zone in a location adjacent to the conveyor system because it is well within the skill of the artisan to clean the environment of contaminants or debris in the active zone for the clean treatment of the substrate.

h. Wherein the step of exposing includes exposing the surface of the substrate to infra-red radiation generated by an infra-red radiation source, wherein the surface of the substrate is heated by exposure to the infra-red radiation generated by the infra-red radiation source, as recited in claim 111.

i. Wherein the step of exposing includes exposing the surface of the substrate to the infrared radiation prior to exposing the surface of the substrate to the ultraviolet radiation, as recited in claim 112.

DE '123 teaches that the surface of the sole is cleaned with a low-boiling point solvent (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the exposing step described by DE '123 with wherein the step of exposing includes exposing the surface of the substrate to infra-red radiation generated by an infra-red radiation source, wherein the surface of the

substrate is heated by exposure to the infra-red radiation generated by the infra-red radiation source; and wherein the step of exposing includes exposing the surface of the substrate to the infrared radiation prior to exposing the surface of the substrate to the ultraviolet radiation because heating the surface of the substrate by exposure to infra-red radiation would have evaporated the low-boiling point solvent off the surface of the substrate to provide a clean and dry surface to work on.

II.     Claims 108-110 and 113-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 36 31 123 A1 ('123) as applied to claims 92-94 above, and further in view of **Cates et al.** (US Patent No. 5,512,123) and **Elliott et al.** (US Patent No. 5,669,979).

DE '123 is as applied above and incorporated herein.

The method of DE '123 differs from the instant invention because DE '123 does not disclose the following:

- a.     Exposing the substrate to a discharge from an electro-ionization device, as recited in claim 108.
- b.     Wherein the electro-ionization device is located in the active zone, as recited in claim 109.
- c.     Circulating a gas proximate said electro-ionization device so that said gas flows over the electro-ionization device onto the substrate, as recited in claim 110.

Like DE '123, Cates teaches improving the bondability of a surface. Cates

teaches that an ionized gas stream, which may include gaseous ions such as  $N_2^+$ ,  $N^+$ ,  $O_2^+$ ,  $O^+$  and  $O^-$  can be directed to bathe the target area on the surface with an ionized gas stream received from an ionized gas generator to further enhance the surface bondability. The ionized gas generator manufactures the ionized gas stream from dry gas by a gas supply which may include dry air, ozone, chlorine, nitrogen, carbon dioxide or ammonia (col. 6, lines 32-44).

Elliott teaches that an electro-ionization gas generator manufactures an ionized gas stream from dry gas by a gas supply (= input gas) which may include  $Cl_2$ ,  $O_2$ ,  $O_3$ , and  $F_2$  (col. 5, lines 50-59; col. 12, lines 47-65; and Fig. 6).

The use of the electro-ionization gas generator disclosed by Elliott as the ionized gas generator disclosed by Cates would have been a selection of old parts to operate in new environments in order to achieve the same results. *In re Ross* 105 USPQ 237. And the substitution of known equivalent structures was held to have been obvious. *In re Ruff* 118 USPQ 343 (CCPA 1958).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of DE '123 by exposing the substrate to a discharge from an electro-ionization device; wherein the electro-ionization device is located in the active zone; and circulating a gas proximate said electro-ionization device so that said gas flows over the electro-ionization device onto the substrate because this would have enhanced the surface bondability as taught by Cates (col. 6, lines 32-44) and Elliott (col. 5, lines 50-59; col. 12, lines 47-65; and Fig. 6).

d. Directing gas over the surface of the substrate exposed to the active zone, as recited in claim 113.

e. Wherein the gas to be injected over the surface of the substrate exposed to the active zone includes a gas selected from the group consisting of carbon tetrachloride, chloroform, halogen functionality compounds, oxygen functionality compounds, water vapor, oxygen, air, silanes, amine functionality compounds, ammonia and nitrogen, as recited in claim 114.

Cates teaches ozone and nitrogen (col. 6, lines 32-44) and Elliott teaches oxygen and ozone (col. 5, lines 50-59).

**III. Claims 115, 119 and 120 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 36 31 123 A1 ('123).**

DE '123 is as applied for the reasons as discussed above and incorporated herein.

DE '123 also teaches wherein the material is selected from the group consisting of a glue, a coating, an adhesive, a paint and a resinous compound (= polyurethane adhesives) [abstract].

The substrate includes a synthetic polymer (= thermoplastic rubber materials) [abstract].

The method of DE '123 differs from the instant invention because DE '123 does

not disclose the following

a. Wherein the intensity of said electromagnetic radiation at the surface of the substrate ranges from about 0.1 joules per square centimeter to about 50,000 joules per square centimeter, as recited in claim 115.

The electromagnetic radiation disclosed by DE '123 inherently has an intensity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the intensity described by DE '123 with the intensity of said electromagnetic radiation at the surface of the substrate ranges from about 0.1 joules per square centimeter to about 50,000 joules per square centimeter because the intensity of the electromagnetic radiation is a result-effective variable and one skilled in the art has the skill to calculate the intensity that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, it appears that one having ordinary skill in the art would have had the skill to adjust the intensity of the electromagnetic radiation source to radiate a metal substrate vs. an organic substrate. It does not appear that the same intensity would have been applied to both types of materials.

b. Wherein the substrate includes a naturally occurring polymer, as recited in claim 120.

DE '123 teaches vulcanized rubber materials and thermoplastic rubber materials

(abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the rubber materials described by DE '123 with wherein the substrate includes a naturally occurring polymer because some rubber materials are naturally occurring materials and no difference is seen between in using a synthetic rubber and a naturally occurring rubber.

**IV.** **Claims 121-123** are rejected under 35 U.S.C. 103(a) as being unpatentable over **DE 36 31 123 A1 ('123)**.

DE '123 is as applied for the reasons as discussed above and incorporated herein.

**V.** **Claims 124-127** are rejected under 35 U.S.C. 103(a) as being unpatentable over **DE 36 31 123 A1 ('123)** as applied to claims 121-123 above, and further in view of **Cates et al.** (US Patent No. 5,512,123) and **Elliott et al.** (US Patent No. 5,669,979).

DE '123, Cates et al. and Elliott et al. are as applied for the reasons as discussed above and incorporated herein.

**VI.** **Claims 128-132 and 134-135** are rejected under 35 U.S.C. 103(a) as being unpatentable over **DE 36 31 123 A1 ('123)**.

DE '123 is as applied for the reasons as discussed above and incorporated

herein.

**VII. Claim 133 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE 36 31 123 A1 ('123) as applied to claims 128-132 and 134-135 above, and further in view of Cates et al. (US Patent No. 5,512,123) and Elliott et al. (US Patent No. 5,669,979).**

DE '123, Cates et al. and Elliott et al. are as applied for the reasons as discussed above and incorporated herein.

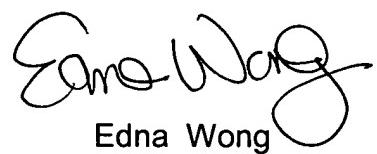
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
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